

CLAIMS

[1] A cooling device comprising a cooler provided in an interior that is insulated adiabatically from an exterior, a cooling fan disposed on a front surface of the cooler, and a cooling chamber that is defined by a space in front of the cooling fan and in which an object to be cooled is placed, the cooling device drawing cooled air behind the cooling fan with the fan and allowing the cooled air to flow into the cooling chamber,

wherein $a/D = 1/2$ to $1/4$ is satisfied, where a indicates a dimension of a gap between the cooler and the cooling fan along a front-back direction and 10 D indicates a diameter of the cooling fan.

[2] The cooling device according to claim 1, wherein a dimension of a gap between the cooler and a wall surface on a back surface side of the cooler is set to be equal to or larger than 50 mm.

[3] A cooling device comprising a cooler provided in an interior that is insulated adiabatically from an exterior, a cooling fan disposed on a front surface of the cooler, and a cooling chamber that is defined by a space in front of the cooling fan and in which an object to be cooled is placed, the cooling device drawing cooled air behind the cooling fan with the cooling fan and allowing the cooled air to flow into the cooling chamber,

20 wherein a dimension of a gap between the cooler and a wall surface on a back surface side of the cooler is set to be larger than 50 mm.

[4] The cooling device according to claim 3, wherein a lateral surface of the cooler is covered with a control plate so as to prevent substantially air from moving in and out through the lateral surface of the cooler.

25 [5] The cooling device according to any one of claims 1 to 4, wherein a number of revolutions of the cooling fan is adjustable.

[6] The cooling device according to claim 5, wherein the number of revolutions is 1200 to 2100 rpm.

[7] The cooling device according to any one of claims 1 to 6, wherein a 30 vibration driving portion for vibrating a placement stage on which the object

to be cooled is placed is provided in the cooling chamber.

[8] The cooling device according to any one of claims 1 to 7, wherein the coolers are provided so as to face each other with the cooling chamber interposed therebetween, and the cooling fans provided respectively on the
5 front surfaces of the facing coolers are offset so as not to face each other.

[9] The cooling device according to any one of claims 1 to 8, wherein a number of the cooling fans provided on the front surface of the cooler is more than one, and when the front surface of the cooler is divided virtually into a plurality of blocks, the cooling fans are arranged on the front surface
10 corresponding to blocks selected in a staggered manner.

[10] The cooling device according to any one of claims 1 to 9, wherein a rotation of the cooling fan is set to be counterclockwise in the Northern Hemisphere and clockwise in the Southern Hemisphere.